

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION**

CELLULAR COMMUNICATIONS
EQUIPMENT LLC,

Plaintiff,

v.

LG ELECTRONICS, INC., ET AL.,

Defendants.

Civil Action No. 6:14-cv-982-JRG
LEAD CASE

**PLAINTIFF'S OPENING BRIEF
ON CLAIM CONSTRUCTION**

TABLE OF CONTENTS

| | | |
|------|--|----|
| I. | INTRODUCTION | 1 |
| II. | APPLICABLE LAW | 1 |
| A. | The claims define the scope of the invention..... | 1 |
| B. | Claims are interpreted in light of the intrinsic record | 2 |
| C. | Extrinsic evidence may not contradict or limit the claim language..... | 2 |
| III. | DISPUTED TERMS AND PHRASES..... | 3 |
| A. | U.S. Patent No. 8,868,060..... | 3 |
| 1. | “storing, at the terminal of the cellular wireless communications system, a group of specific identifiers” / “store a group of specific identifiers” (cl. 1, 7, 15) | 4 |
| 2. | “at least two specific identifiers ... being for different types of emergencies” (cl. 1, 7, 15) | 5 |
| 3. | “paging message” (cl. 1, 7, 15) | 7 |
| 4. | “establishing at least one of a physical channel and a logical channel” (cl. 1, 7, 15) | 8 |
| 5. | “temporary mobile subscriber identity” (cl. 1, 7, 15) | 9 |
| B. | U.S. Patent No. 8,385,966..... | 10 |
| 1. | “ ΔP_{PC} ” (cl. 1, 9, 10) | 11 |
| 2. | “wherein the initial transmit power depends on a preamble power of a first message sent on an access channel and the second power control adjustment state $f(0)$ ” (cl. 1, 9, 10) / “preamble power” (cl. 1, 2, 5, 9-11) | 13 |
| 3. | “wherein the first power control adjustment state $g(i)$ for $i=0$ is initialized as: $P_{O_UE_PUCCH} + g(0) = \Delta P_{PC} + \Delta P_{rampup}$ ” (cl. 3, 12) / “wherein the second [accumulation] power control adjustment state $f(i)$ for $i=0$ is initialized as: $P_{O_UE_PUSCH} + f(0) = \Delta P_{PC} + \Delta P_{rampup}$ ” (cl. 1, 9, 10) | 15 |
| C. | U.S. Patent No. 8,848,556..... | 17 |
| 1. | “bitmap” (cl. 13, 14, 21, 22) / “a bitmap indicating which power headroom reports are being reported” (cl. 13, 21) | 18 |
| 2. | “secondary cells” (cl. 13, 21) | 19 |

3. “bits for power headroom reports for a plurality of secondary cells” (’556 Patent cl. 13) / “bits for power headroom reports for a plurality of the secondary cells” (cl. 21).....20

TABLE OF AUTHORITIES

CASES

| | |
|---|-----------|
| <i>3M Innovation Props. Co. v. Tredegar Corp.</i> , 725 F.3d 1315 (Fed. Cir. 2013)..... | 2, 12 |
| <i>Altiris v. Symantec Corp.</i> , 318 F.3d 1363 (Fed. Cir. 2003)..... | 4 |
| <i>Bell Atl. Network Servs., Inc. v. Covad Commc’ns Grp., Inc.</i> , 262 F.3d 1258 (Fed. Cir. 2001)..... | 3 |
| <i>Broadcom Corp. v. Emulex Corp.</i> , 732 F.3d 1325 (Fed. Cir. 2013)..... | 12-13, 22 |
| <i>Digital Biometrics, Inc. v. Identix, Inc.</i> , 149 F.3d 1335 (Fed. Cir. 1998)..... | 2 |
| <i>Hill-Rom Services, Inc. v. Stryker Corp.</i> , 755 F.3d 1367 (Fed. Cir. 2014)..... | 5, 8, 12 |
| <i>Inverness Med. Switzerland GmbH v. Warner Lambert Co.</i> , 309 F.3d 1373 (Fed. Cir. 2002)..... | 12 |
| <i>Kara Tech. Inc. v. Stamps.com Inc.</i> , 582 F.3d 1341 (Fed. Cir. 2009)..... | 2 |
| <i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005)..... | 1-3 |
| <i>Power Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc.</i> , 711 F.3d 1348 (Fed. Cir. 2013)..... | 1-2 |
| <i>Rexnord Corp. v. Laitram Corp.</i> , 274 F.3d 1336 (Fed. Cir. 2001)..... | 1 |
| <i>Vitronics Corp. v. Conceptiontronic</i> , 90 F.3d 1576 (Fed. Cir. 1996)..... | 2 |

TABLE OF EXHIBITS

| Exhibit | Description |
|----------------|---|
| Exhibit A | United States Patent Number 8,868,060 |
| Exhibit B | Excerpts from Paper 3, IPR2015-01564 (Petition for <i>Inter Partes</i> Review Under 35 U.S.C. §§ 311-319 and 37 C.F.R. § 42.100 <i>Et. Seq.</i> filed by Kyocera Communications, Inc.) |
| Exhibit C | Excerpts from ETSI TS 136 331 V8.2.0 (2008-11); LTE; Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification (3GPP TS 36.331 version 8.2.0 Release 8) |
| Exhibit D | Excerpts from ETSI TS 136 300 V8.4.0 (2008-04); Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access (E-UTRAN); Overall Description; Stage 2 (3GPP TS 36.300 version 8.4.0 Release 8) |
| Exhibit E | Excerpts from ETSI TS 125 304 V7.4.0 (2008-01); Universal Mobile Telecommunications System (UMTS); User Equipment (UE) procedures in idle mode and procedures for cell reselection in connected mode (3GPP TS 25.304 version 7.4.0 Release 7) |
| Exhibit F | United States Patent Number 8,385,966 |
| Exhibit G | Excerpt from The American Heritage Dictionary of the English Language (3 rd ed. 1992) (“initialize”) |
| Exhibit H | United States Patent Number 8,848,556 |
| Exhibit I | Excerpt from Microsoft Computer Dictionary (5 th ed. 2002) (“bitmap”) |

I. INTRODUCTION

Plaintiff Cellular Communications Equipment LLC (“CCE” or “Plaintiff”) submits this opening claim construction brief addressing U.S. Patent No. 8,385,966 (“the ’966 Patent”), U.S. Patent No. 8,868,060 (“the ’060 Patent”), and U.S. Patent No. 8,848,556 (“the ’556 Patent”).

These patents are part of a broader portfolio acquired from Nokia Siemens Networks (“NSN”) and generally relate to mobile communications. The ’966, ’060, and ’556 Patents have been declared potentially essential to practicing UMTS and/or LTE wireless standards, and cover aspects of implementation and use of those technologies. The accused products are mobile devices, including cellular phones, tablets, and wireless cards.

Seventeen claim terms are disputed. Three concern indefiniteness allegations addressed in the parties’ letter briefs. *See* Dkt 123, 129. Pursuant to the parties’ agreement, CCE will respond to Defendants’ indefiniteness allegations in its reply claim construction brief (rather than separate summary judgment briefing) if and when the Court grants Defendants’ briefing request. *See* Dkt 118. Accordingly, fourteen terms across the three asserted patents are addressed below.

II. APPLICABLE LAW

A. The claims define the scope of the invention.

The claims of a patent “define the invention to which the patentee is entitled the right to exclude.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (citation omitted). Consequently, “[c]laim construction begins with the language of the claim.” *Power Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc.*, 711 F.3d 1348, 1360 (Fed. Cir. 2013). Claim terms generally receive their ordinary and customary meaning, which is the meaning that a person of ordinary skill in the art would have understood the claim term to have as of the filing date of the patent application. *Phillips*, 415 F.3d at 1313. “[U]nless compelled to do otherwise, a court will

give a claim term the full range of its ordinary meaning as understood by an artisan of ordinary skill.” *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1342 (Fed. Cir. 2001).

B. Claims are interpreted in light of the intrinsic record.

Notwithstanding the primacy of the claim language, courts interpret claim language “in light of the intrinsic evidence of record, including the written description, the drawings, and the prosecution history.” *Power Integrations*, 711 F.3d at 1360 (citation omitted). The specification can be useful, for example, to “determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning.” *Vitronics Corp. v. Conceptronic*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). Additionally, “[i]diosyncratic language, highly technical terms, or terms coined by the inventor are best understood by reference to the specification.” *3M Innovation Props. Co. v. Tredegar Corp.*, 725 F.3d 1315, 1321 (Fed. Cir. 2013). Although the specification can be a useful guide to how the inventor used a disputed term, “limitations discussed in the specification may not be read into the claims.” *Id.*; *see also Kara Tech. Inc. v. Stamps.com Inc.*, 582 F.3d 1341, 1348 (Fed. Cir. 2009).

The prosecution history can also inform the meaning of the claim language “because it may contain contemporaneous exchanges between the patent applicant and the PTO about what the claims mean.” *Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335, 1344 (Fed. Cir. 1998). The prosecution history, however, cannot be relied upon “to construe the meaning of [a] claim to be narrower than it would otherwise be unless a patentee limited or surrendered claim scope through a clear and unmistakable disavowal.” *3M Innovation Props.*, 725 F.3d at 1322.

C. Extrinsic evidence may not contradict or limit the claim language.

Extrinsic evidence, such as technical dictionaries, may “help educate the court regarding the field of the invention and can help the court determine what a person of ordinary skill in the

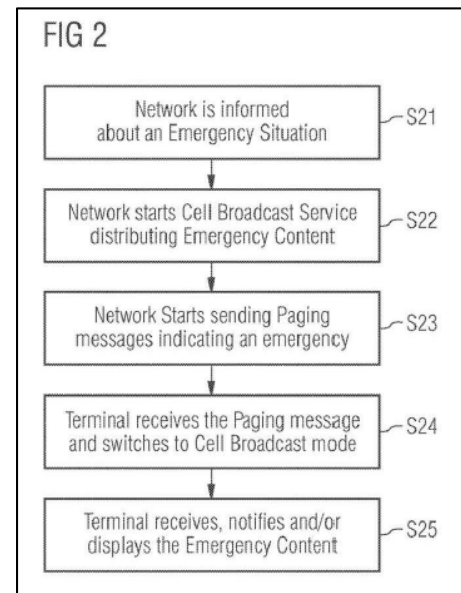
art would understand claim terms to mean,” but such evidence should be considered in the context of the intrinsic record. *Phillips*, 415 F.3d at 1319. Extrinsic evidence cannot be used to “vary, contradict, expand, or limit the claim language from how it is defined, even by implication, in the specification or file history.” *Bell Atl. Network Servs., Inc. v. Covad Commc’ns Grp., Inc.*, 262 F.3d 1258, 1269 (Fed. Cir. 2001).

III. DISPUTED TERMS AND PHRASES

A. U.S. Patent No. 8,868,060

The ’060 Patent describes techniques for efficiently disseminating emergency warning messages in a cellular network. Ex. A at 1:46-2:3. According to its disclosure, in the event of an emergency, network equipment (e.g., a base station) can broadcast emergency content to mobile devices in the cell using a broadcast service. *Id.* at 2:29-44, 2:59-64. Constantly listening for such broadcast services is inefficient and “has harsh consequences on [] battery drain and [] stand-by time of a [mobile device].” *Id.* at 1:56-63.

The ’060 Patent discloses improved techniques for determining when a mobile device should listen for broadcast information. It discloses using paging messages to alert mobile devices within a cell to switch to a broadcast mode for receiving emergency content. *Id.* at 2:45-55, 2:64-66. Upon receiving a paging message, a device checks whether an identifier included in the message corresponds to one of a group of specific identifiers for different types of emergencies or a terminal-specific identifier. *Id.* at 3:33-41. In the case of the former, the mobile device switches to a broadcast mode to receive emergency content. *Id.* at 3:46-52. In the case of the latter, the



device establishes a physical or logical channel for ordinary communications. *Id.* at 3:41-46.

1. **“storing, at the terminal of the cellular wireless communications system, a group of specific identifiers” / “store a group of specific identifiers” (cl. 1, 7, 15)**

| CCE’s Proposed Construction | Defendants’ Proposed Construction |
|-----------------------------|---|
| No construction necessary. | “store [/storing], at the terminal, a plurality of specific identifiers prior to receipt of the paging message” |

Representative claim 7 recites a memory unit configured to store a group of “specific identifiers.” It also recites a control unit configured to check whether a paging message received from the base station includes at least one of the specific identifiers. The disputed claim language is clear and requires no construction.

Defendants seek to inject an unwarranted sequential limitation, asking the Court to specify that the claimed “group of specific identifiers” must be stored *before* the paging message is received. Such is unfounded. Indeed, claims 7 and 15 each recite an apparatus, not a method, and Defendants’

7. A terminal operating in a cellular wireless communication system having a plurality of terminals, the terminal comprising:
a memory unit configured to:
store a group of specific identifiers common to the plurality of the terminals supporting an emergency warning, at least two specific identifiers in the group of the specific identifiers being for different types of emergencies, the cellular wireless communication system being a bi-directional cellular wireless communication system between a base station and the plurality of terminals; and
a control unit configured to:
check whether a paging message received from the base station includes at least one specific identifier of the group of the specific identifiers;
switch to a broadcast mode for receiving broadcast content on a broadcast channel only if the paging message received from the base station includes the at least one specific identifier of the group of the specific identifiers; and
establish at least one of a physical channel and a logical channel only if the received paging message includes a temporary mobile a subscriber identity allocated to the terminal.

attempt to impose an order of steps on a device is, on its face, incongruous.

Moreover, method claims that do not recite an order do not require one, unless logic or grammar dictate otherwise. *Altiris v. Symantec Corp.*, 318 F.3d 1363, 1369 (Fed. Cir. 2003). In this instance, the claim is agnostic as to when specific identifiers are stored and a paging message is received. It is within the ambit of the claim that a terminal device first receives a paging message, then receives and stores the “group of specific identifiers” — and *vice versa*. In

either case, the terminal has the requisite information to “check whether a paging message received ... includes at least one specific identifier of the group of the specific identifiers.”

Nor does the specification support Defendants’ construction. Although it describes embodiments in which specific identifiers are known to the terminal “a priori” (*see* Ex. A at 5:5:52-56), nothing demands that the device store the specific identifiers before receiving the paging message. Moreover, even if disclosed embodiments entailed such an order, it is axiomatic that the claims are not restricted to those embodiments. *Hill-Rom Services, Inc. v. Stryker Corp.*, 755 F.3d 1367, 1371 (Fed. Cir. 2014) (“While we read claims in view of the specification, of which they are a part, we do not read limitations from the embodiments in the specification into the claims.”).

Finally, it bears noting that Defendants’ proposal inexplicably substitutes the word “plurality” for the word “group” in the claim language. Such is representative of the gratuitous editorial license Defendants repeatedly take with the claim language. Substituting “plurality” for “group” is unnecessary, unhelpful, and risks unintended and unforeseen consequences. Indeed, in this instance, it eviscerates antecedent basis for a later claim element, which refers back to the “group” of identifiers recited here. Defendants’ alteration should be rejected.

2. “at least two specific identifiers ... being for different types of emergencies” (cl. 1, 7, 15)

| CCE’s Proposed Construction | Defendants’ Proposed Construction |
|-----------------------------|--|
| No construction necessary. | “at least two specific identifiers each uniquely indicating a different type of emergency” |

As noted above, claim 7 requires a memory unit configured to store a group of specific identifiers. The claim language goes on to specify that “at least two specific identifiers” in that group are “for different types of emergencies.” This element uses ordinary words according to

their plain meaning. It is consistent with the intrinsic record and requires no construction.

Defendants err by replacing the words “being for” with “each uniquely indicating.” As an initial matter, the word “unique” conveys significant restrictions and should not be indiscriminately injected into claim language. Nothing in the claims, specification, or file history requires a “unique” relationship between each specific identifier and different emergencies. In fact, the specification uses the word “unique” only once; not in the manner Defendants propose, but to contrast a specific identifier used for emergencies in one embodiment (the “E-TMSI”) with a terminal-specific identifier (the “TMSI”). Ex. A at 4:65-5:3.

Further, the claim language clearly says that the specific identifiers are “for different types of emergencies,” not “uniquely indicating a different type of emergency.” In other words, Defendants seek to eradicate a word denoting *purpose* (“for”) and insert in its place a phrase denoting *distinctive identification*. Only the former coincides with the specification, which explains that different specific identifiers can be used to trigger particular responses in light of different types of emergency. For example, one specific identifier can be used to activate the broadcast mode “for an infinite time,” requiring the user to disable it. *Id.* at 5:31-35. Another specific identifier can be used to activate the broadcast mode for a shorter time only, which is useful “if the emergency is predictably of a limited severity.” *Id.* at 5:36-41. Hence, these two specific identifiers are each *for* different types of emergencies (e.g., extended or limited severity) without “uniquely indicat[ing]” them.

Finally, it bears noting that, in its *inter partes* review petition filed last July, Kyocera repeatedly argued that specific identifiers “for” different types of emergencies” does not “indicate” different types of emergencies — directly contravening the construction (“each uniquely indicating a different type of emergency”) it now proposes to the Court:

First, in construing the claims, one of ordinary skill in the art would recognize the language of Claim 1, which states that the specific identifiers are merely “**for** different types of emergencies.” Accordingly, the plain language of Claim 1 does not require that the specific identifiers include an indication of different types of emergencies...

Ex. B at 6-7 (internal citations omitted). This reveals not only Defendants’ duplicity, but the flimsiness of their proposed construction.

3. “paging message” (cl. 1, 7, 15)

| CCE’s Proposed Construction | Defendants’ Proposed Construction |
|-----------------------------|---|
| No construction necessary. | “a message sent by a base station on a shared channel and carrying information corresponding to unique identifiers” |

Representative claim 7 recites a terminal with a control unit configured to check whether “a *paging message* received from the base station” includes at least one specific identifier of the group of specific identifiers. As with the other disputed terms, “paging message” is used in accordance with its ordinary and customary meaning to one skilled in the art. Indeed, the ’060 Patent relates to emergency notification in cellular networks, and specifically references 3GPP networks and technical standards. *See, e.g.*, Ex. A at 1:31-32, 4:25-27. The term “paging message” is routinely employed in 3GPP technical documents, and carries understood meaning to those skilled in the art. *E.g.*, Ex. C at 19, 25; Ex. D 14, 35, 83; Ex. E at 7, 10. As the inventors have not disclaimed or employed a lexicography to redefine the phrase “paging message,” the claim language should receive the full scope of its ordinary meaning and no construction is necessary. *Hill-Rom Services*, 755 F.3d at 1371 (“We depart from the plain and ordinary meaning of claim terms based on the specification in only two instances: lexicography and disavowal.”).

Nonetheless, Defendants again meddle with the claim language. In this instance, they extract the phrase “paging message” and recast the claim to cover *any* message “sent on a shared channel” that “carries” information “corresponding to unique identifiers.” Significantly, this is the second time Defendants attempt to insert the word “unique” into the claim, despite a dearth of intrinsic support for that confined proposal. Nothing in the intrinsic record dictates that the paging message convey “unique” identifiers.

Moreover, Defendants’ definition is suspiciously vague and ambiguous; the “unique identifiers” referenced in their proposal are not tied to any other claim language, and it is unclear what it means to “carry” information that “corresponds” to such identifiers.

At bottom, Defendants’ approach abrogates the term the inventors chose — “paging message” — and substitutes a phrase of their own making. There is no lexicography or disclaimer to justify any departure from the claim language, and Defendants’ proposal must fail.

**4. “establishing at least one of a physical channel and a logical channel”
(cl. 1, 7, 15)**

| CCE’s Proposed Construction | Defendants’ Proposed Construction |
|--|---|
| No construction necessary. Alternatively, “establishing a physical channel, a logical channel, or both” | “establishing at least one communication channel between the terminal and the base station” |

Claim 7 recites that the control unit of the claimed terminal is configured to check whether the paging message includes at least one specific identifier of the group of specific identifiers and “establish at least one of a physical and a logical channel” only if the received paging message includes a temporary mobile subscriber identity allocated to the terminal.

This language is clear and unambiguous; it requires establishing a physical channel, a logical channel, or both. Defendants’ proposal needlessly eviscerates the terms “physical or logical,” substituting a characterization of their own choosing (“communication”). This is

unhelpful, unnecessary, and unwarranted. Nothing in the intrinsic record redefines the phrase subject phrase as defendants propose. Moreover, their construction specifies that the channel is “between the terminal and the base station” — yet another restriction Defendants indiscriminately append to straightforward claim language that requires no construction.

5. “temporary mobile subscriber identity” (cl. 1, 7, 15)

| CCE’s Proposed Construction | Defendants’ Proposed Construction |
|-----------------------------|---|
| No construction necessary. | “a temporary identifier allocated to the terminal to uniquely identify the mobile subscriber” |

As noted above, representative claim 7 recites a control unit configured to “establish at least one of a physical or logical channel only if the received paging message includes *a temporary mobile subscriber identity* allocated to the terminal.” As with the other disputed terms, this claim language is clear, and there is no applicable lexicography or disclaimer. One skilled in the art would readily understand that the claimed “temporary mobile subscriber identity” is a temporary identity of a mobile subscriber. It requires no construction.

Defendants, for the third time, attempt to add the word “unique” to the claims. Again, there is no basis for their revision of the claim scope; the word “unique” imposes a restriction unsupported by the claim language. Further, Defendants employ that restrictive language without meaningful context; it is unclear how “unique” they believe the identifier must be. Most likely, Defendants’ intend to require “unique” identification of a mobile subscriber in a global sense — a constraint that might be difficult to prove, and one unsupported by intrinsic evidence. The claim requires a “*temporary ... identity*,” not a globally unique identifier. Moreover, Defendants’ proposal surreptitiously adds complexity to the claim by requiring an identifier allocated to the *terminal* to uniquely identify the *mobile subscriber*, thereby introducing a new,

unclaimed relationship between an identifier, a terminal, and a mobile subscriber. Their proposal is unfounded and should be rejected.

B. U.S. Patent No. 8,385,966

The '966 Patent describes improvements for power control for an uplink shared channel (PUSCH) and a physical uplink control channel (PUCCH) in a cellular network. According to the '966 patent, “the problem solved [by the disclosed] embodiments is how the power control formulas for PUSCH and PUCCH are taken in use during or after the Random Access procedure[,]” during which a mobile device searches for a network. Ex. F at 4:16-19. More specifically, the inventors recognized that “[w]hen the UE first sends data on the PUSCH, there is no previous subframe and so $i=0$, which is addressed in 3GPP TS 36.213 v8.2.0 as zeroing out the entire term so that $f(0)=0$.” *Id.* at 6:33-35. Likewise for the PUCCH power control initial condition $g(0)$, the inventors recognized that the conventional approach was to “zero[] out the entire term so that $g(0)=0$.” *Id.* at 6:46-49.

To address shortcomings with “how the UE specific parameters of the PUSCH and PUCCH power control formulas are initialized[,]” *id.* at 4:25-27, the inventors proposed new systems and methods for initializing $f(i)$ and $g(i)$ (the power control adjustment state functions for P_{PUSCH} and P_{PUCCH}). More specifically, the inventors disclosed an embodiment where “the UE receives a power control command (*e.g.*, ΔP_{PC}) in the preamble response from the eNB” and then initializes the $f(i)$ and $g(i)$ power control functions for $i=0$ so that:

$$P_{0_UE_PUSCH} + f(0) = \Delta P_{\text{PC}} + \Delta P_{\text{rampup}}$$

$$P_{0_UE_PUCCH} + g(0) = \Delta P_{\text{PC}} + \Delta P_{\text{rampup}}$$

Id. at 6:59-67. This solution provides improved power control by taking advantage of specific information from the preamble power control process (e.g., ΔP_{PC} and ΔP_{rampup}) to initialize specific power control adjustment states ($f(i)$ and $g(i)$).

1. “ ΔP_{PC} ” (cl. 1, 9, 10)

| CCE’s Proposed Construction | Defendants’ Proposed Construction |
|-----------------------------|--|
| No construction necessary. | “the difference between a target preamble power and a power actually observed at a base station” |

Claims 1, 9, and 10 each expressly state that “ ΔP_{PC} is a power control command indicated in a second message that is received in response to sending the first message.” Despite this express definition *in the claims*, Defendants ask the Court to construe ΔP_{PC} as something else, namely: “the difference between a target preamble power and a power actually observed at a base station.”

Defendants’ proposal is an improper attempt to read limitations from a preferred embodiment into the claims. While column 7 of the ’966 Patent

We claim:
 1. A method comprising:
 using a processor to initialize for $i=0$ a first power control adjustment state $g(i)$ for an uplink control channel and a second power control adjustment state $f(i)$ for an uplink shared channel to each reflect an open loop power control error;
 using the processor to compute an initial transmit power for the uplink shared channel using full path loss compensation, wherein the initial transmit power depends on a preamble power of a first message sent on an access channel and the second power control adjustment state $f(0)$; and
 sending from a transmitter a third message on the uplink shared channel at the initial transmit power;
 wherein the second power control adjustment state $f(i)$ for $i=0$ is initialized as:

$$P_{0_UE_PUSCH} + f(0) = \Delta P_{PC} + \Delta P_{rampup};$$

in which:
 $P_{0_UE_PUSCH}$ is a power control constant for the uplink shared channel that is specific for a user equipment executing the method;
 ΔP_{rampup} is a ramp-up power for preamble transmissions;
 and
 ΔP_{PC} is a power control command indicated in a second message that is received in response to sending the first message.

explains that, in “an embodiment of the invention ... ΔP_{PC} is here assumed to be the difference between the target preamble power and the power that eNB actually observes” (*see id.* at 6:58-7), this passage does not limit the invention. *See, e.g., 3M Innovation*, 725 F.3d at 1321 (Fed. Cir. 2013) (“[L]imitations discussed in the specification may not be read into the claims.”); *Inverness Med. Switzerland GmbH v. Warner Lambert Co.*, 309 F.3d 1373, 1379 (Fed. Cir. 2002) (“It is improper to limit the claim based on a preferred embodiment of the invention.”). Nor does it

redefine the claim language or disclaim scope. *See, e.g., Hill-Rom*, 755 F.3d at 1371-72 (“To act as its own lexicographer, a patentee must clearly set forth a definition of the disputed claim term other than its plain and ordinary meaning and must clearly express an intent to redefine the term.... Disavowal requires that the ‘specification [or prosecution history] make[] clear that the invention does not include a particular feature ... or is clearly limited to a particular form of the invention.’”) (citations omitted). Rather, the claims themselves specify how ΔP_{PC} is to be understood, and they should be accorded their full breadth.

Moreover, Defendants’ construction conflicts with other disclosed embodiments. As noted above, the asserted claims state that “ ΔP_{PC} is a power control command indicated in a second message that is received in response to sending the first message.” Consistent with this, the specification teaches that:

[t]he actual value of ΔP_{PC} may be signaled directly by the eNB as the power control command, or to save on signaling overhead the eNB may explicitly signal a bit signal (one, two or more bits) as the power control command which the receiving UE uses as an index to look up the true value ΔP_{PC} that is associated in a locally stored table with that index.

Ex. F at 7:7-13 (emphasis added). Thus, in this embodiment, ΔP_{PC} is a “bit signal” used as an index to a pre-stored ΔP_{PC_value} , which is necessarily an approximation of an actual value. By tying ΔP_{PC} to “a power actually observed at a base station,” Defendants’ proposal demands real-time precision that would exclude this embodiment. *See, e.g., Broadcom Corp. v. Emulex Corp.*, 732 F.3d 1325, 1333 (Fed. Cir. 2013) (“This court has clarified that an interpretation which ‘excludes a [disclosed] embodiment from the scope of the claim is rarely, if ever correct.’”).

2. “wherein the initial transmit power depends on a preamble power of a first message sent on an access channel and the second power control adjustment state $f(0)$ ” (cl. 1, 9, 10) / “preamble power” (cl. 1, 2, 5, 9-11)

| Disputed Term | CCE’s Proposed Construction | Defendants’ Proposed Construction |
|---|-----------------------------|---|
| “preamble power” | No construction necessary. | “a transmit power of a preamble sent on an access channel” |
| “wherein the initial transmit power depends on a preamble power of a first message sent on an access channel and the second power control adjustment state $f(0)$ ” | No construction necessary. | “wherein the initial transmit power takes into account both the preamble power and the second power control adjustment state $f(0)$ ” |

These disputed terms each concern the same “wherein” clause of the independent claims and are thus addressed together. Representative claim 1 describes computing an initial transmit power that “depends on” (1) “a preamble power of a first message sent on an access channel” and (2) “the second power control adjustment state $f(0)$.” Albeit technically dense, this claim language is not unclear. Nor have the inventors set forth a special lexicography or disclaimer necessitating construction

We claim:

1. A method comprising:

using a processor to initialize for $i=0$ a first power control adjustment state $g(i)$ for an uplink control channel and a second power control adjustment state $f(i)$ for an uplink shared channel to each reflect an open loop power control error;

using the processor to compute an initial transmit power for the uplink shared channel using full path loss compensation, wherein the initial transmit power depends on a preamble power of a first message sent on an access channel and the second power control adjustment state $f(0)$; and

sending from a transmitter a third message on the uplink shared channel at the initial transmit power; wherein the second power control adjustment state $f(i)$ for $i=0$ is initialized as:

$$P_{0_UE_PUSCH} \cdot f(0) = \Delta P_{PC} + \Delta P_{rampup};$$

in which:

$P_{0_UE_PUSCH}$ is a power control constant for the uplink shared channel that is specific for a user equipment executing the method;

ΔP_{rampup} is a ramp-up power for preamble transmissions; and

ΔP_{PC} is a power control command indicated in a second message that is received in response to sending the first message.

of this phrase. Rather, it employs straightforward terminology according to its plain meaning, is consistent with the specification, and requires no construction.

Nonetheless, Defendants seek to rewrite several aspects of this claim without justification, deleting language, substituting their own, and needlessly complicating the claim:

“wherein the initial transmit power ~~depends on~~ **takes into account both a preamble power transmit power of a preamble** of a first message sent on an access channel and the second power control adjustment state $f(0)$ ”

First, Defendants recast the relationship between the “preamble power,” “second power control adjustment state,” and the “initial transmit power” by substituting their own language (“takes into account”) for the claim language (“depends on”). Such is improper. The subject language — “depends on” — has a well-understood ordinary meaning. The intrinsic record sets forth no special lexicography or disclaimer, and the specification repeatedly corroborates the inventors’ use of “depends on.” *See, e.g.*, Ex. F at 4:35-36 (“ P_{MAX} is the maximum allowed power that depends on the UE power class”); 6:27-46 (“the formula for $P_{PUSCH}(i)$ depends on the current PUSCH power control adjustment state”); 11:25-31 (“wherein the initial transmit power depends on a preamble power of a first message sent on an access channel”). Defendants’ proposal — “takes into account” — fails to add any clarity and invites unintended consequences. To the extent their proposal narrows the claim language, it excludes preferred embodiments. And insofar as it alters the claim scope at all, it is unjustified.

Second, Defendants ask to Court to add a word to the claim — “transmit” — in an apparent attempt to confine the “preamble power” to something less than its full scope, *i.e.*, “a transmit power of a preamble.” But the claim, as written, broadly specifies a “preamble power,” is fully supported by the specification, and should receive the full breadth of its plain meaning. For instance, the ’966 Patent describes an embodiment, shown in Figure 4, in which a UE computes an initial transmit power for the uplink shared channel that “depends on a preamble power of a first message sent on an access channel {e.g., preamble power of the RACH access request preamble}, and is initialized with the second power control adjustment state $f(0)$ {e.g., equation [5]}.” Ex. F at 11:25-31; Fig. 5. This disclosure parallels the broad claim language,

and substantiates that the inventors intended to claim exactly what they did — and nothing less. *See also id.* at Abstract; 3:21-23; 3:38-39; 3:51-53.

Finally, Defendants’ proposal eviscerates the phrase “of a first message” from the subject term. This amendment is not only baseless, but undermines antecedent basis for subsequent references to “the first mesage” in dependent claims. *See, e.g., id.* at claims 2 (“wherein the first message comprises a random access request message...”); 5 (“ $P_{preamble}$ is the preamble power of the first message”); 14 (“ $P_{preamble}$ is the preamble power of the first message”). Eliminating antecedent basis via claim construction is, on its face, improper.

In sum, Defendants’ proposals fail to elucidate the claim language and runs afoul of basic tenants of claim construction. The Court should reject their proposals.

3. **“wherein the first power control adjustment state $g(i)$ for $i=0$ is initialized as: $P_{O_UE_PUCCH} + g(0) = \Delta P_{PC} + \Delta P_{rampup}$ ” (cl. 3, 12) / “wherein the second [accumulation] power control adjustment state $f(i)$ for $i=0$ is initialized as: $P_{O_UE_PUSCH} + f(0) = \Delta P_{PC} + \Delta P_{rampup}$ ” (cl. 1, 9, 10)**

| Disputed Term | CCE’s Proposed Construction | Defendants’ Proposed Construction |
|--|--|--|
| “wherein the first power control adjustment state $g(i)$ for $i=0$ is initialized as: $P_{O_UE_PUCCH} + g(0) = \Delta P_{PC} + \Delta P_{rampup}$ ” (cl. 3, 12) | Plain and ordinary meaning; no construction necessary. Alternatively, “wherein the first power control adjustment state $g(i)$ for $i=0$ is set such that $P_{O_UE_PUCCH} + g(0) = \Delta P_{PC} + \Delta P_{rampup}$ ” | “wherein $g(0)$ is calculated from the values of $P_{O_UE_PUCCH}$, ΔP_{PC} , and ΔP_{rampup} by calculating a sum of $g(0)$ and $P_{O_UE_PUCCH}$ and a sum of ΔP_{PC} and ΔP_{rampup} and equating the two calculated sums” |
| “wherein the second [accumulation] power control adjustment state $f(i)$ for $i=0$ is initialized as: $P_{O_UE_PUSCH} + f(0) = \Delta P_{PC} + \Delta P_{rampup}$ ” (cl. 1, 9, 10) | No construction necessary. Alternatively, “wherein the second [accumulation] power control adjustment state $f(i)$ for $i=0$ is set such that $P_{O_UE_PUSCH} + f(0) =$ | “wherein $f(0)$ is calculated from the values of $P_{O_UE_PUSCH}$, ΔP_{PC} , and ΔP_{rampup} by calculating a sum of $f(0)$ and $P_{O_UE_PUSCH}$ and a sum of ΔP_{PC} and ΔP_{rampup} and equating the two calculated sums” |

| | | |
|--|-------------------------------------|--|
| | $\Delta P_{PC} + \Delta P_{rampup}$ | |
|--|-------------------------------------|--|

This dispute turns on the meaning of “initialize,” and how initialization equations in the claim language are understood. The subject phrases concern initialization of a first or second power control state (identified as $g(i)$ and $f(i)$, respectively).

“Initialize” has a well-understood ordinary meaning: “to set to a starting position or value.” Ex. G at 929. The claims employ that phrase consistent with that meaning. For instance, representative claim 1 (shown at right) requires initializing the second power control adjustment state $f(i)$ as $P_{O_UE_PUSCH} + f(0) = \Delta P_{PC} + \Delta P_{rampup}$. In other words, the claim

We claim:
1. A method comprising:
using a processor to initialize for $i=0$ a first power control adjustment state $g(i)$ for an uplink control channel and a second power control adjustment state $f(i)$ for an uplink shared channel to each reflect an open loop power control error;
using the processor to compute an initial transmit power for the uplink shared channel using full path loss compensation, wherein the initial transmit power depends on a preamble power of a first message sent on an access channel and the second power control adjustment state $f(0)$; and
sending from a transmitter a third message on the uplink shared channel at the initial transmit power;
wherein the second power control adjustment state $f(i)$ for $i=0$ is initialized as:
 $P_{O_UE_PUSCH} + f(0) = \Delta P_{PC} + \Delta P_{rampup}$;
in which:
 $P_{O_UE_PUSCH}$ is a power control constant for the uplink shared channel that is specific for a user equipment executing the method;
 ΔP_{rampup} is a ramp-up power for preamble transmissions; and
 ΔP_{PC} is a power control command indicated in a second message that is received in response to sending the first message.

requires that $f(i)$ is *set to a starting position* such that conforms to that equation. Similarly, dependent claim 3 requires initializing the first power control adjustment state $g(i)$ as $P_{O_UE_PUSCH} + g(0) = \Delta P_{PC} + \Delta P_{rampup}$, thereby requiring that $g(i)$ is set to a starting position consistent with this equation.

Defendants disregard the plain meaning of “initialize,” and seek to substitute in its place a *calculation*. But the claims do not require “calculation” of $f(0)$, much less executing the convoluted process set forth in their construction. While “calculating” requires a mathematical computation, “initializing” is a broader term that (as noted above) encompasses “setting” at a starting value. Further, when a calculation is called for, the inventors specified it — claims 5, 6, 14 and 15 each recite calculations, but claims 1, 3, 9, 10, and 12 do not. *See* Ex. F at claims 5

and 14 (“ $\Delta_{TF}(TF(i))$ is calculated from received signaling”); claims 6 and 15 (“ $P_{0_PUSCH}(j)$ is calculated from received signaling”). Revising the claim to require a calculation is improper.

Moreover, Defendants’ construction is inaccurate and confusing. Specifically, they purport to require calculating (1) a sum of $f(0)$ [or $g(0)$] and $P_{O_UE_PUSCH}$ [or $P_{O_UE_PUCCH}$] and (2) a sum of ΔP_{PC} and ΔP_{rampup} and then (3) “equating the two calculated sums.” In other words, their construction dictates calculating a power control adjustment state by calculating a first sum, calculating a second sum, and then *equating those sums*. This is nonsensical. Equating the two calculated sums does not result in any initialized value; either the two calculated sums are equal, or they are not. Moreover, even if the claims did require a calculation (they do not), Defendants’ proposal rigidly interprets the claimed equations to dictate how they are to be solved, thereby ignoring basic mathematical principles (such as substitution) that permit different (but mathematically equivalent) solutions.

C. U.S. Patent No. 8,848,556

The ’556 Patent describes a technique to control the timing, and the content, of “power headroom” reports to be made from a mobile device to a base station. Ex. H at Abstract. LTE Advanced network technologies support a feature called “carrier aggregation” that allows a mobile device to use multiple “component carriers” having different frequency bandwidths for transmissions to a base station, thereby increasing throughput. *Id.* at 1:14-25. These “component carriers” may include a primary carrier provided on the “primary serving cell,” and up to four more secondary carriers provided on “secondary serving cells.” *See id.* at 4:23-53. The ’556 Patent discloses an improvement related to the timing and generation of power headroom reports in the context of multiple component carriers. Rather than sending multiple,

separate power headroom reports for each component carrier, the '556 Patent employs a control element and bitmap to facilitate streamlined reporting. *See id.* at 3:61-4:6; 5:4-12.

1. “bitmap” (cl. 13, 14, 21, 22) / “a bitmap indicating which power headroom reports are being reported” (cl. 13, 21)

| Disputed Term | CCE’s Proposed Construction | Defendants’ Proposed Construction |
|--|---|---|
| “bitmap” (cl. 13, 14, 21, 22) | “a data structure that represents information in the form of a collection of individual bits” | “a collection of bits” |
| “a bitmap indicating which power headroom reports are being reported” (cl. 13, 21) | No construction necessary. <i>See</i> “bitmap” above. | “a collection of bits indicating which power headroom reports are being reported” |

The phrase “bitmap” has a well-understood ordinary meaning to one skilled in the art, and the '556 Patent uses the phrase according to that meaning. For instance, the Microsoft Computer Dictionary — cited by CCE and Defendants in their P.R. 4-3 disclosures — explains that a “bitmap” is “a data structure in memory that represents information in the form of a collection of individual bits.” Ex. I at 61. This aligns with claim language specifying that the claimed bitmap “indicat[es] which power headroom reports are being reported” and “include[s] bits for power headroom reports for a plurality of the secondary cells.” *See id.* 9:32-36; 10:34-39. And it aligns with the specification, which repeatedly describes and illustrates “bitmaps” as data structures used to indicate specific power headroom reports being reported. *See, e.g., id.* at 5:4-29.

13. A non-transitory computer readable medium encoded with a computer program that, when executed in hardware, causes the hardware to perform a process, the process comprising:
 preparing a power headroom report control element, based on a trigger configured by a base station, the trigger determining when the power headroom report control element is to be sent in an uplink, the preparing of the power headroom report control element includes incorporating a bitmap indicating which power headroom reports are being reported, the preparing of the power headroom report control element further includes preparing the bitmap to include bits for power headroom reports for a plurality of secondary cells; and
 sending the prepared power headroom report control element to the base station.

Defendants inexplicably seek to strip this phrase of its ordinary meaning (which denotes organization, *i.e.*, “a data structure”) and substitute for it *any* “collection of bits.” The fallacy of this proposal is apparent; applying Defendants definition, garbage data — signifying *nothing* — would qualify as a “bitmap.” This is a baseless and improper modification of the claim scope that must be rejected.

2. “secondary cells” (cl. 13, 21)

| CCE’s Proposed Construction | Defendants’ Proposed Construction |
|--|---|
| No construction necessary, other than to clarify that a primary cell is different than a secondary cell. | “serving cells/component carriers configured for a UE that are different from the primary serving cell” |

Each asserted independent claim recites “preparing the bitmap to include bits for power headroom reports for a plurality of *secondary cells*.” The parties agree that “secondary cells” are different than “primary cells,” but their agreement ends there.

The phrase “secondary cells” is straightforward and requires no construction. The ’556 Patent describes an embodiment that includes primary and secondary cells as follows:

13. A non-transitory computer readable medium encoded with a computer program that, when executed in hardware, causes the hardware to perform a process, the process comprising:
 preparing a power headroom report control element, based on a trigger configured by a base station, the trigger determining when the power headroom report control element is to be sent in an uplink, the preparing of the power headroom report control element includes incorporating a bitmap indicating which power headroom reports are being reported, the preparing of the power headroom report control element further includes preparing the bitmap to include bits for power headroom reports for a plurality of secondary cells; and
 sending the prepared power headroom report control element to the base station.

This cell that provides the security input and the NAS mobility information is referred to as the primary serving cell (PCell). In the downlink, the carrier corresponding to the PCell is the downlink (DL) primary component carrier (DL PCC) while in the uplink it is the uplink (UL) primary component carrier (UL PCC).

Depending on user equipment capabilities, secondary serving cells (SCells) can be configured to form, together with the PCell, a set of serving cells. In the downlink, the carrier corresponding to an SCell is a downlink secondary component carrier (DL SCC), while in the uplink it is an uplink secondary component carrier (UL SCC).

In view of the above, the configured set of serving cells for a user equipment may always include one PCell and one or more SCells.

Ex. H at 4:32-46.

This confirms that the primary and secondary cells are not the same, as reflected in CCE's proposal. But nothing in the intrinsic record further limits the meaning of "secondary cells," and Defendants' construction is misguided. As an initial matter, their proposed nomenclature is improper because the meaning of "serving cells/component carriers" is indistinct, at best. Further, to the extent their proposal seeks to equate "serving cells" with "component carriers," it is unclear why that equivocation is necessary; the claim does not expressly refer to "component carriers."

Simply put, there is no reason to construe the claim term as Defendants insist. It is not confusing or unclear. Nor does the intrinsic record set forth an applicable lexicography or disclaimer. Moreover, unnecessary revisions to claim language should be avoided, as they invite unintended consequences that may breed new disputes concerning claim scope. "Secondary cells" requires no construction, and the Court should reject Defendants' proposal.

3. "bits for power headroom reports for a plurality of secondary cells" ('556 Patent cl. 13) / "bits for power headroom reports for a plurality of the secondary cells" (cl. 21)

| CCE's Proposed Construction | Defendants' Proposed Construction |
|-----------------------------|---|
| No construction necessary. | "bits for power headroom reports for a plurality of secondary cells in a configuration such that a single bit in the bitmap does not correspond to a single secondary cell" |

Representative claim 13 recites preparing a "power headroom report control element" that includes "a bitmap indicating which power headroom reports are being reported." As noted above, a "bitmap" is "a data structure that represents information in the form of a collection of

individual bits.” Accordingly, when the claim further states that the bitmap is prepared to “to include bits for power headroom reports for a plurality of secondary cells,” one skilled in the art would readily understand it. A bitmap is comprised of bits, and the claim simply requires that a plurality of such bits are for a plurality of secondary cells.

This is consistent with the specification, which explains that each bit in the bitmap can be linked to a particular power headroom report. Ex. H at 3:64-65; 5:6-8. For example, in one embodiment an 8-bit bitmap may be organized as follows:

A first bit can be used for a user equipment power headroom report (UE-PHR). The use of the first bit for UE-PHR is, of course, an optional item. In some embodiments, there may be no need for such a PHR in addition to per-CC PHR. A second bit can be used for Type 1 PHR for PCell. A third bit can be used for Type 2 PHR for PCell. Fourth through seventh bits can be for PRH of SCell1, SCell2, SCell3, and SCell4.

Id. at 5:24-33. In this example, each of bits 4-7 is for SCell14, respectively. Thus, as with the other disputed phrases in the ’556 Patent, the claim language is straightforward and is entitled to scope commensurate with its ordinary meaning.

Nonetheless, Defendants seek more, asking the Court to append language specifying that the claimed “bits for power headroom reports for a plurality of secondary cells” is “in a configuration such that a single bit in the bitmap does not correspond to a single secondary cell.” This onerous restriction is a baseless construct that finds no root in the intrinsic evidence. It is nowhere found in the claims, specification, or file history excerpts identified by Defendants in their P.R. 4-3 disclosures.

Nor is it consistent with the disclosed embodiments. To the contrary, the ’556 Patent expressly contemplates that a single bit in a bitmap may relate to a single secondary cell — that is precisely what the passage above describes. *Id.* at 5:31-33 (“Fourth through seventh bits can be for PRH of SCell1, SCell2, SCell3, and SCell4”); *see also id.* at 6:45-52 (“wherein the bitmap

includes ... fourth through seventh bits for power headroom reports for four secondary cells”); 7:14-15. Defendants’ confusing negative limitation excludes these embodiments by forbidding that a single bit in the bitmap correspond to a single secondary cell. That strained construction is improper and should be rejected. *Broadcom Corp. v. Emulex Corp.*, 732 F.3d 1325, 1333 (Fed. Cir. 2013) (“[A]n interpretation which ‘excludes a [disclosed] embodiment from the scope of the claim is rarely, if ever correct.’”).

Dated: **October 26, 2015.**

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CERTIFICATE OF SERVICE

I hereby certify that on the 26th day of October, 2015, I electronically filed the foregoing document with the clerk of the Court for the U.S. District Court, Eastern District of Texas, Tyler Division, using the Court's electronic case filing system. The electronic case filing system sent a "Notice of Electronic Filing" to the attorneys of record who have consented in writing to accept this Notice as service of this document by electronic means.

/s/ Edward R. Nelson, III